October 20, 2016

Mr. Gary Miller
Remedial Project Manager
San Jacinto River Waste Pits Site
Superfund Division
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Dear Mr. Miller,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (Sierra Club) regarding the September 2016 U.S. Environmental Protection Agency (EPA), Region 6, Proposed Plan (PP) for the San Jacinto River Waste Pits Site (SJRWPS), Harris County, Texas.

The Sierra Club agrees with EPA that Alternatives 6N and 4S, as modified by the recommendations in this comment letter, should be adopted as the PP. The reasons for this include:

1) The present temporary cap, which was extolled as being able, by the responsible parties (RP), to keep the dioxin waste safe and secure, has had problems with the rip-rap material being moved or moved off the temporary cap.

2) The EPA has not stated why and what caused a 25 foot by 22 foot hole in the temporary cap. Some dioxin waste has escaped from this hole. If the RP cannot ensure that a temporary cap's integrity is maintained when lesser storms than the 100-year flood occur then how can the public expect the RP to ensure that during extreme hydrologic events or even lesser events that a permanent cap's integrity will be maintained for 500 years or more.

3) Sampling by EPA has found thinning of the temporary cap at many locations. The idea that a better cap will take care of the problem not only ignores a hurricane or other worst-caste scenario but also ignores the fact that lesser events have already damaged the temporary cap which was supposed to be protective at the 100-year flood level but has failed below this level. No cap alternative is sufficiently reliable or can guarantee no leaking of waste for 500 years.

4) The cap may ooze dioxin waste (due to its weight) when it is supposed to be permanent and protect the dioxin waste. The public deserves more than continuous dribbling of dioxin waste into water where they boat, swim, fish, and eat fish.

5) The cap alternatives fail to address that for 500 years (essentially forever) someone will have to ensure that pilings installed are still in good condition so that they protect the cap from barge strikes. The cap alternative does not address the increase in number of barges north of Interstate 10 and their extreme closeness to the cap. If these barges break loose from their moorings they have only a few hundred feet to travel before they hit the cap. Local barge data was not used during risk assessment analysis and instead national barge data was used. It is not acceptable to ignore local data that has a direct impact on a possible breach of the cap.

6) Scour and re-suspension of sediment that settles on the cap during floods or high water times is a problem. The cap's integrity is of concern and the Sierra Club does not believe the RP's, who have a conflict of interest. The RP's want to keep the price of the remediation alternative as low as possible so that they can make as much money (save the expense of a complete clean-up) as possible. The RP's past statements and actions about cap integrity have been proven wrong. The Sierra Club does not know if the cap will be engineered right. People do not trust the RP to do the right thing.

7) Natural recovery, which the Sierra Club believes has been overstated in the past, is certainly shorter than attempting to keep the dioxin waste capped for 500 years. All it takes is one significant cap breach to ensure that a catastrophic release occurs and human, Galveston Bay, water quality, ecosystem, and economic health is affected severely.

8) There is a failure to state how much money will be available and who will ensure that all operation, maintenance, repair, and replacement costs are paid for and implemented. The EPA has not taken into account where funds will come from for 500 years.

9) It has been shown that the cap was breached in late 2015 and that it was disturbed in the summer of 2012, the summer of 2015, and in 2016 in storms (10-year) that are far less dangerous than the 100-year storm. The cap has not withstood the test of time.

10) Sea level rise in the next 100 years, not to mention in the next 500 years, will be significant. Recent studies suggest that sea level may rise 4 to 6 feet or more by the end of 2100. How sea level rise and movement of the San Jacinto River will affect the cap and its ability to protect dioxin waste is significant but is not known.

11) The 10 to 12 feet of scour that occurred in the 1994 flood next to the Interstate 10 bridge is significant with regard to maintenance of the long-term integrity of the cap.

12) The use of one surface current during modeling does not make sense. There may be, besides a surface current, mid, bottom, and eddy currents that operate at different speeds, directions, and carry different loads of sediment. In addition, there is a saltwater wedge that comes up the San Jacinto River with water that is different in density than the freshwater which flows downstream. This provides a very different sediment transport scheme than the one modeled and could affect cap integrity.

13) It is not a wise idea to average out erosion for each cell modeled. The range of erosion rates and totals that apply for each cell should have been reported in the modeling runs and could affect cap integrity.

14) The site where the SJRWPS exists has changed over time and will change again in the future. Climate change, additional development, hurricanes and other storms, more run-off, more impervious surface, and other factors will alter the site and the 100-year flood-way and floodplain it exists in. The site is inherently dynamic and changes. This is not a location where a cap is a viable or permanent solution.

15) Because people continue to fish in the area, and are thus endangered by toxic bioaccumulation exposure, because people are prone to trespass, and because people may expose themselves or damage the cap it is not reasonable to insist that a cap will prevent exposures over 500 years.

A cap alternative requires operation, maintenance, repair, replacement, monitoring, and other costs for custodial care of the site for 500 years. The cost for signs, fencing, educational materials, and other institutional and land use controls that will be needed to keep people away from the site so that exposure to and health effects from contaminants do not occur due to the consumption of fish caught from or near the site are all required, very costly to implement, and difficult to enforce.

The SJRWPS, a hazard to human health and the environment, for children, grandchildren, and many generations after us (there are 25 generations in 500 years), must be cleaned up totally right now. If we believe in responsibility, we made or allowed this mess to be made so we have the responsibility to permanently and completely clean this mess up in perpetuity, to protect others from environmental, social, and economic hardships.

It is of the utmost importance that the SJRWPS be completely cleaned up. A half-way job is not acceptable. Saving money is not an adequate excuse. The

responsible parties have the money to clean-up the entire SJRWPS. No one in the future must finish our clean-up job, the job we did not do right the first time.

16) **Page 18, Ecological Risk, PP,** the EPA inadequately or does not discuss the presence or level of bioaccumulation and biomagnification with regard to the SJRWPS. Synergistic effects between toxic contaminants are also not discussed. These uncertainties makes it even more imperative that as much dioxin and other toxic contaminants be removed from the San Jacinto River as possible to ensure that long-term biological and ecological effects on humans and other organisms do not occur.

17) **Page 19, Remedial Action Objectives and Preliminary Remediation Levels, PP,** despite what the Texas Department of State and Health Services says about its failure to identify subsistence fishers in the SJRWPS, it is obvious that people are catching and eating fish either on or near the SJRWPS. This exposure must stop to prevent human health impacts.

18) **Pages 19 through 37, PP,** the Sierra Club supports a modified version of Alternatives 6N and 4S with:

a. Complete removal of contaminated material using 30 ng/kg (parts per trillion or ppt) as the risk-based remediation removal goal;

b. Dewatered waste material that is filtered to remove residuals and transported to a permitted industrial hazardous waste landfill for disposal;

d. Sheet steel piling and or earthen barriers placed around all the site(s) (a few feet beyond where the contamination stops);

e. The use of suction or hydraulic excavation and or other less disturbing dredging methods to remove liquid material;

f. Dust suppression;

g. Two or three end-of-the-excavation clean-up passes;

h. Monitoring of fish and other organisms, sediment, and water during the removal process and for five to ten years after clean-up to demonstrate and ensure that fish and other organisms, water, and sediment dioxin levels drop and are below levels of concern;

i. Wash-down areas for covered transports to minimize dust;

j. Education, fences, signs, and patrols to inform the public and prevent access on the site(s) and nearby area;

k. ownership of the site by a public entity to protect it in perpetuity;

l. Use of a third party, with no RP conflict of interest, to oversee the construction, along with EPA oversight;

m. If concentrations above 30 ng/kg are found at the sand mining site then removal of contaminated material to below the 30 ng/kg level;

n. Resolution of the groundwater contamination issue with additional well water testing, analyses, and if necessary clean-up of contaminated water and or provision of a permanent supply of water for affected parties.

The Sierra Club is not comfortable with the 200 and 240 ppt concentration that is used to define what alternative standards are for complete removal of waste from the SJRWPS. The Sierra Club favors using the 30 ng/kg dioxin sediment standard for recreational fishers (30 ppt concentration) as the risk-based remediation goal to ensure that as much dioxin is removed from the San Jacinto River and Galveston Bay Estuary to provide maximum protection for the San Jacinto River, Galveston Bay, human health, water quality, and ecosystems.

The entire Galveston Bay Estuary, as well as all the organisms and people that live on this estuary (including subsistence and recreational fishers) is potentially exposed to dibenzodioxins/dibenzofurans and other toxic contaminants from the SJRWPS. Therefore the 30 ppt concentration, because it is more protective for people and ecosystems, should be used. When contamination of the Galveston Bay Estuary is considered we are talking about not just localized contamination but regional contamination. Contamination potentially endangers several million people (all who consume fish or are exposed to water with dioxin/difuran).

The Texas Department of State Health Services health advisory for the consumption of fish caught in the San Jacinto River to the Lake Houston Dam Site was based upon exposure for people of not more than 2 to 5 ppt of dioxin. This is considerably below the 30 ppt concentration the Sierra Club proposes and significantly below the 200 and 240 ppt concentrations that EPA proposes.

We need to completely clean-up the SJRWPS in the right way. We must not do a half-way job. We must not use as excuses that we must save money or that we don't have enough money. No one 20, 30, 40, or 50 years from now must be made responsible for finishing our job, the job we did not do in the right way. Delay only adds to the cost of clean-up. The Sierra Club encourages EPA to choose the modified Alternatives 6N and 4S described in this comment letter, with other appropriate mitigation measures, and with a 30 ppt target removal concentration or lower.

The Sierra Club appreciates this opportunity to comment.  Thank you.

Sincerely,

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096
713-664-5962